BULLETIN OF
THE NEW YORK ACADEMY
OF MEDICINE

VOL. 36, NO. 5 MAY 1960

JACKSON AND FREUD: THE RELATION OF DISSOLUTION TO REGRESSION*

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IN 1891 Freud described aphasia as a retrogression or dissolution of the speech apparatus to an earlier mode of function under pathologic conditions. This point of view, based on the work of Hughlings Jackson, took issue with the localization theories then popular. It is to Freud's contact with Jackson at this point that one can trace many of the basic ideas of psychoanalysis. Ideas here expressed concerning the "speech apparatus" were the forerunners of similar ideas in relation to the "psychic apparatus".

While Freud's debt to Hughlings Jackson has long been acknowledged in psychoanalytic literature[1-4], neurologists have somehow overlooked the impact of Jackson's concept of evolution and dissolution of the nervous system on psychoanalytic theory. May I briefly summarize those ideas of Jackson which, it seems to me, have become part of psychoanalysis, and show how the latter, in turn, could be of value to clinical neurology.

Jackson's primary thesis is that the functioning central nervous

* Presented at The New York Academy of Medicine before the combined meeting of the Section on Neurology and Psychiatry and the New York Neurological Society, April 14, 1959.

system of the adult is the end result of an evolutionary or developmental process. The patterns of function and behavior dominant in the first stages of development come under the controlling influence of new patterns as the nervous system matures. These in turn become dominated by others which represent a still more advanced level of organization. The progression involves a transfer of influence from centers which are anatomically complete and comparatively well-organized at birth to others which in the adult state are still evolving. It also involves a transition from automatic behavior patterns to others which are under voluntary control[5]. The highest and most recently acquired functional patterns are also the most vulnerable to trauma. When the central nervous system is subjected to stress, the highest levels are most readily impaired. A direct consequence of impairment is that previously submerged patterns again dominate the clinical picture. For this reversal of the developmental process Jackson borrowed Spencer's term *dissolution.*

Freud's account of the development of the psychic apparatus parallels the schema of Jackson. The period of infancy and early childhood is characterized by relatively simple and stereotyped patterns of behavior. The latter, including the wishes and needs which motivate them, are associated with instinctual biological drives. In time these give way to other learned patterns which are socially more complex. The capacity to contact reality improves. The pleasure-seeking point of view which characterizes the first stages gives way to a more adult appreciation of the demands of reality. The thought processes responsible for this more realistic point of view which exert a controlling and regulating influence on the individual were referred to collectively by Freud as the *ego* and the *super ego.* The infantile impulses brought under their control Freud called the *id.*

The automaticity of the earliest behavior patterns in Jackson's scheme could be compared to Freud's emphasis on the stereotypy of the infantile reactions and to his concept of the system *Unconscious* to which these basic drives are subsequently relegated. The predominance, at maturity, of voluntary behavior which Jackson emphasizes, is reflected in Freud's emphasis on the predominant role of the system *Conscious,* with its associated capacity for more flexibly adaptive behavior in the emotionally mature adult. Under certain conditions of stress, the controlling influence of the ego and the superego becomes

impaired. The balance of power is upset and previously controlled infantile behavior patterns again dominate the clinical picture. To this reversal of the developmental process Freud applied the term *regression.*

Jackson always made the point that dissolution is not necessarily a manifestation of disease. On the contrary, the state of health is characterized by "a rhythm of evolution and dissolution"[6]. This rhythm is encountered regularly in sleep, in dreams and in reveries. Freud made exactly the same point about regression. "Find out about dreams," said Jackson, "and you will find out about insanity." "Dreams," echoed Freud, "contain the psychology of the neuroses in a nutshell" [2]. Jackson often defined the severity of psychopathology in terms of sleep, regarding psychotic reactions analogous to light dreaming sleep as the least severe; those analagous to deeper sleep with somnambulism as the next grade in severity; and those analagous to deep dreamless sleep as the most severe. Recent psychoanalytic theory attempts a similar classification in psychoanalytic terms[7, 8].

Next in importance to Jackson's concept of dissolution is his interpretation of symptoms in terms of negative and positive states. He insisted that a destroyed and therefore absent structure cannot of itself explain symptoms. It can only permit other intact and functioning structures to come to the surface, structures whose manifestations conceivably had been held in abeyance as long as the higher level controlling centers still functioned. He makes the comparison to an overthrown government. The destruction of the governing body makes it possible for anarchic upheavals to occur. These and the gradual return to a new order are manifestations of the groups and individuals who still remain, not of those who are destroyed. This concept is well illustrated by the following penetrating remarks of Jackson about a delirious patient[9]: "Besides his (the patient's) *not knowings* there are his *wrong knowings.* He imagines himself to be at home or at work, and acts, as far as practicable, as if he were. Ceasing to recognize his nurse as a nurse he takes her to be his wife. His delirium is the (expression of) the *survival of the fittest states* on his then highest evolutionary level. Plainly he is reduced to a more automatic condition. Being, negatively, lost to his present *real* surroundings, from loss of function of the highest and latest developed and least organized nervous arrangements, he, positively, talks and acts as if adjusted to some former *ideal* surroundings."

In these extraordinary comments Jackson provides many ideas which are incorporated into the very foundations of psychoanalytic psychology. First of all, he recognizes here the adaptational significance of the patient's behavior. Unable to adapt (or adjust, as Jackson puts it) to the realities of his illness and his hospital surroundings, he wishfully transforms his environment. In his delusional state the hospital is no longer strange and bewildering. In fact it is no longer the hospital but his own home. The nurse who attends him is no longer an impersonal stranger but is his own wife. In a negative sense he retreats from an unbearable reality. In a positive sense he tries to reestablish contact with reality by means of delusional transformations of his surroundings. The delusions are based on the memories of happier experiences in relation to some former ideal. Here is the model for the psychoanalytic concept of psychosis[10]. No psychoanalyst would take issue with Jackson's contention[11] that the clinical picture in psychosis is the result of the complex interaction of four factors: the depth of dissolution (or severity of regression), the patient's premorbid personality, the specific environment to which he is reacting, and the speed with which the dissolution takes place.

Both Jackson and Freud puzzled over the relationship between the psychological and the physiological. Jackson stated[12]: "In all our studies of diseases of the nervous system we must be on our guard against the fallacy that what are physical states in lower centers fine away *into* psychical states in higher centers; that, for example, vibrations of sensory nerves *become* sensations, or that somehow or other an idea produces a movement." Freud made this point of view his own. With Jackson, he regarded the psychological as a dependent concomitant of the physiological[1, 13]. Both acknowledged that the bridge between matter and mind was for them an unapproachable mystery. Jackson toiled largely on one side, the matter side, of this bridge; Freud, on the side of the mind. Yet, though the paths they travelled ran parallel, they often met in non-Euclidean fashion. The following brief examples, selected from a larger group, will show how these points of view are not only parallel but mutually reinforcing.

The Bender Face-Hand Test[14]: The reappearance in the brain-injured adult of a pattern of response to double simultaneous cutaneous stimulation (DSS) which is present normally in childhood is a striking example of the Jacksonian concept of dissolution. The unexpected

dominance of the genital region of a three year old child of either sex on DSS is a striking confirmation from a completely independent line of investigation of basic psychoanalytic theory as to the existence at this early age of the so-called phallic stage. Thus, neurologic and psychoanalytic data seem to concur in the idea that the genital organ is an important locus of the self-concept at this early age. The curious position of the hand as the least dominant element in double simultaneous cutaneous stimulation also lends itself to logical explanation in psychoanalytic terms[15]. Suffice it to say that on the basis of a psychoanalytic approach the positive face-hand test in the brain-injured adult could be regarded as the sensory counterpart of instinctual grasping and sucking.

"Pushing" in Cattle[16]: Certain domestic animals (ungulates) with brain disease push their heads repeatedly and persistently against any vertical surface in their field of vision. In so doing the animals tend to slide the head along the vertical surface until it comes to rest in a corner, where it will stand indefinitely with its head pressed snugly against the two walls as they meet in the corner. This puzzling and apparently meaningless behavior becomes recognizable as one studies the behavior of the newborn animal in its search for the mother's breast. Thus the phenomenon of "pushing" in the ungulate appears theoretically to be a counterpart of instinctual sucking and grasping in humans. These patterns tend to re-emerge not only in relation to brain disease but also as a response to fear or anxiety. Thus, dissolution in response to brain trauma parallels regression in response to emotional trauma.

The Sense of Smell: Elsberg[17, 18] and his co-workers demonstrated that the sense of smell is more acute in normal children than it is in normal adults. One can anticipate this finding on the theory that the four-footed position makes olfaction a more important sensory avenue for contacting the environment, and that with the assumption of the upright position olfaction is surpassed by other sensory receptors. The youngster who is closer to the crawling phase of his development would be expected on the basis of this evolutionary theory to have more sensitive olfaction than the adult. One would predict on the basis of the principles of dissolution and regression that adult patients with clouding of the sensorium would have hyperosmia when contrasted to normal adults. This was indeed Elsberg's finding. It caused him to speculate that in some instances at least increased intracranial pressure was rendering the olfactory nerve hyper-irritable. The dissolution-

regression approach to the problem provides a more reasonable explanation.

Fright Reactions After Electroconvulsive Therapy (ECT): Some patients, on waking up from ECT, react to the first face that they see with great terror. The thought occurred to me that the reaction of these patients was reminiscent of the terrified response of infants around the age of eight months when they are confronted with a strange face. Spitz[19], who studied this phenomenon in detail, made the point that prior to this age infants do not usually distinguish between one face and another. A mother substitute is as acceptable as the mother. However, starting at eight months of age, the infant makes a sharp and vociferous distinction. The sudden appearance of a stranger's face, however friendly, tends to elicit a reaction of terror. Spitz found that he could approach these children walking backwards without eliciting fright; that is, the back of the head of a stranger was regarded benignly; only the face had a traumatic effect. For example, he found that he could back right up to these children and engage their friendly interest by wiggling his fingers at them. Once the child was actively playing with his fingers he could turn around slowly without precipitating the terror reaction. Hypothesizing that the post-ECT patients had undergone dissolution and regression to this "eight-month" reaction pattern, I sat with my back to patients who had previously awakened with terror. After a time the patient would awaken, scrutinize the back of my head with calm interest and inquire quietly who I was. At this point I would move my fingers playfully. The patient would take hold of my fingers and repeat the question. In a friendly voice I would greet him and slowly turn around. Like the eight-month old child, the post-ECT patient would now accept me without terror. This fact was confirmed repeatedly in several cases. An interesting additional practical application of this phenomenon has been described by clinical psychologists who do testing of children. A child who is too frightened to make test drawings while the examiner is facing him will perform quite readily when the examiner turns his back.

Voluntary Eye Movements: A final example concerns itself with the capacity to follow, on command, the movements of an object in the field of vision. It has been observed that the nursing infant will selectively follow the movements of the mother's face at a time when it will disregard other moving objects with which one tries to engage

its attention. Spitz[20] found that the child will also follow a balloon on which a face is drawn, or even a piece of paper on which there is a crude representation of a full face. An identical selective attraction to the moving human face can be demonstrated on neuro-ophthalmologic examination of the adult patient with clouded sensorium due to organic brain disease[21]. Thus, certain brain-injured patients who will disregard the request to follow the moving finger of the examiner will follow the movements of his face or that of a simple graphic representation of the face if instructed to do so.

The presence of the Babinski sign and tonic neck reflexes at birth, their disappearance with growth, and their reappearance in later years in disease, are familiar examples of dissolution. Instinctual sucking and grasping in the brain-injured adult seems to involve psychological regression as well as dissolution. Recently the suggestion was made that certain "psychosomatic" disorders involve dissolution in the reaction patterns of the autonomic nervous system as well as psychological regression[22]. It may be anticipated that research based on the combined principles of dissolution and regression will provide fruitful leads elsewhere.

Conclusion: Dissolution of the central nervous system as measured in neurological terms and regression as measured psychologically tend to parallel each other. The normal developmental process in all its aspects sheds light on the behavior of the adult in health and disease. The work of Hughlings Jackson and that of Sigmund Freud fairly represent two aspects of a common point of view. While the foregoing simple examples, culled from personal experience, are not altogether conclusive, they do, I think, illustrate a basic principle.

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